Ontario active in national policy

Ontario is playing a part in the development of a national policy statement on the total environment, deputy environment minister Everett Biggs told the 20th Ontario Industrial Waste Conference in June.

An inter-ministerial committee has almost completed a provincial white paper on environmental concerns, he told delegates at the Skyline Hotel in Metropolitan Toronto.

This is part of a continuing program springing from the United Nations Conference on the Human Environment in Stockholm last year, he said. Canada, like other concerned nations, is preparing a national position paper on environmental matters, for presentation to a continuing U-N environmental committee.

GOOD RELATIONSHIP

He said he was pleased with the good relationship that has developed between Environment Ontario and Environment Canada, with informal agreement established on areas of jurisdiction. Office space for Environment Canada representation is being provided at Environment Ontario's headquarters in Toronto, he said.

Mr. Biggs told delegates they may see some changes in the structure of the Ministry that will bring environmental services closer to the people. He said a decrease in emotionalism is fostering a more rational approach to pollution problems.

About 250 delegates attended the conference to exchange ideas and techniques in industrial waste control.

Richard W. Judy, chairman of the SDL Institute, in the conference's opening session, evaluated and compared water management policy in a number of European and North American communities. Policy makers wishing to implement or change a program face a shortage of useful evaluative material on the instruments they might employ, he said. Too little evaluation is conducted of existing instruments, he said, so the lack of feedback can allow a country to spend large sums of money on water management to very little effect.

DILEMMA

In his paper, The Growth of Limits, Prof. F. H. Knelman of Sir George Williams University presented the dilemma of man's rapid population and technology growth within the confines of a finite resource supply. The technological fix, or solution to the problem of resource limitation, brings often to a new dilemma.

The answer is to accept now that there is a limit to the power of expanding technology to solve our problems and to develop a steady state society. Before this becomes acceptable either to rich or poor nations, radical redistribution of resources, global resource and environmental management and the elimination of war and

Continued on page 3

ENVIRONMENT ONTARIO — LEGACY

VOLUME 2, NO. 4 "A better Ontario for tomorrow's generations" JULY/AUG., 1973.

Auto hulk regulations go into high gear

Anyone with more than two derelict motor vehicles on his property will be subject to Ontario's new derelict motor vehicle regulation, Environment Minister James Auld announced.

And an abandoned car clean-up program, experimental this year and in practical application next year, ties in with the new regulation which took effect July 7.

"Enforcement measures will be applied gradually," Mr. Auld said, "but our intention is to establish control over private and commercial accumulations of junked automobiles. When the regulation is fully enforced, the owners of these collections will have to choose either proper disposal or the establishment of a regulated, well-run waste management system."

He said those who plan to continue operation will require a certificate, issued only to approved sites and systems. "While the enforcement structure is being developed," he said, "we intend to do our best to encourage people with inoperable cars on their property to have them removed or to co-operate with cleanup programs."

Last summer, the Ministry of the Environment sent seven teams of students across Ontario to establish the extent of the abandoned car problem. They conducted surveys around Pembroke, London, Sault Ste. Marie, Timmins, Kingston, Sudbury and Thunder Bay, pinpointing abandoned cars, assessing the willingness of owners to co-operate in cleanup programs, and encouraging collection.

The survey established that there are close to 500,000 abandoned cars in the province.

As a result of the survey, some local collection of derelict autos was accomplished, Mr. Auld said. "But in the absence of an organized transport and marketing system for recycling, these collected hulks had to be taken to the nearest landfill site.

This summer, $20,000 has been set aside to get these cars from the landfill sites to where they can be reclaimed as raw metal. A car contains more than a ton and a half of steel. That's too much to throw away."

In addition, three experimental programs get under way this summer in Sault Ste. Marie, Thunder Bay and in Renfrew and Lanark counties. Ministry waste management staff estimate that there are about 2,700 abandoned cars to clean up around Sault Ste. Marie, 7,500 in the Thunder Bay area and 10,000 in the other experimental program area.

$80,000 has been set aside in the Ministry's budget to try various cleanup systems in these areas.

"Our goal is to determine the most economical system so that we can establish a practical cleanup program next year. It may take two or three years to rid our roads and fields of the backlog of accumulated auto hulks. Even then, we will have to maintain a continuing program, because the need will remain as long as the people of Ontario continue to drive, and wear out, cars," concluded Ontario's environment minister.

Sights like this may soon be something in the past with Ontario's new derelict car legislation.

Recycling in a paper mill

Abitibi Provincial Paper Ltd. proudly claims its Thorold mill is the only mill in Canada to use de-inked pulp for fine paper.

Large bales of clean, used paper are shipped to the mill from suppliers in the urban core of southern Ontario, for this unique recycling program. But the program was undertaken for sound economic reasons before recycling became a household word.

Chief among these is the factor of transportation costs. Every ton of pulp that can be reclaimed from finished paper from nearby sources replaces a ton of wood or pulp that would otherwise have to be shipped from the north.

RECYCLING PROCESS

The baled paper is broken down into pulp through the combined action of water, alkali, heat and mixing. This cooking process is followed by a series of washes and a chlorine bleach to leave a clean, white pulp. Screens, centrifugal cleaners and more washes, remove foreign matter such as metal clips and plastics and other contaminants. Then the reclaimed pulp is stored for mixing with virgin fiber from wood pulp.

This mixture of new and reclaimed pulp varies with the use for which the paper is intended.

Pulp from reclaimed paper helps create a more even paper formation with better opacity in the sheet by filling in the spaces between the larger fibers from the virgin pulp.

On the other hand, every time paper pulp is re-used, the fibers get shorter. For this reason, paper which is likely to be recycled is mixed with a relatively small proportion of reclaimed fiber. Paper which will probably never be reclaimed has an appropriately larger amount of recycled pulp content.

After the proportion of new and reclaimed pulp is settled, other additives are included—dyes for color, clay for softness and improved printing surface, starch for stiffness and other ingredients.

A refining process fibrilates the pulp, making the fibers fuzzy to bind to each other as much as possible.

At this stage, the unborn paper still resembles a cream soup—about one part fiber to 99 parts water. This is fed onto a wire web on the papermaking machine which vibrates to shake out the water and knit the fibers together. This drainage, augmented by suction, leaves a matted felt that is still 80 percent water.

The felt passes from the wire belt to a woolen belt and passes through a press to reduce the water content further. It is down to 65 percent by the time the paper sheet enters the dryer section of the machine.

A series of heated cylinders and highly polished steel rollers dry and iron the surface of the paper to a smooth, even consistency. From the machine, the paper is wound on a reel ready for wrapping and shipping.

The papermaking process requires water in large quantities. This particular plant is equipped to purify as much as eight million gallons of water for its own use, drawn from the Welland Canal each day. A treatment plant removes foreign matter to provide clean water for plant processes.

Another treatment system, developed under the direction of the Ontario Water Resources Commission and subsequently the Ministry of the Environment, cleans up the water that returns to the canal from the mill. This system collects water used in the deinking, bleaching and papermaking processes, all wastewaters that are reused and recycled within the plant to cut down on total water consumption, and feeds this water into a clarifier. The water treated in the clarifier flows into the Thorold sanitary sewage treatment system.

The sludge of sediment from the clarifier is trucked to a local quarry.

Z. Milkovic of the air quality and meteorology section poses with his sampling device.

Staff designs sampler

There are times when you have to make do with what you have.

The Air Management Branch was experiencing endless problems with an unsatisfactory soiling sampler, and there [illegible] improved model. Budget restrictions being what they can be at times, it was necessary to adapt available hardware, using the skills of staff in order to solve the problem.

Designed by Z. Milkovic of the air quality and meteorology section, this instrument's advantage lies in the fact that it is fully compatible with the branch's telemetering and computer systems. It can be plugged into these networks for operation at remote locations, and will accept trigger commands, either manually or from the computer.

MEASURES OPACITY

Basically, the instrument is equipped with electronic circuitry, a light source and a roll of special filter tape. When dirt, dust or other airborne matter collect on the tape (fed via input tubes) a reading can be taken based on the amount of opacity deposited on this tape. This value is measured in volts, and converted to the index reading.

The first unit was constructed two years ago, and after appropriate testing, more were built and installed at measuring stations in Sudbury, Hamilton, London and Toronto, where they are in continuous operation feeding data to the branch's Toronto headquarters.

BARGAIN PRICE

Perhaps the most interesting fact about the instrument is that it was constructed from an obsolete instrument worth about $450, and new parts worth $150. If purchased outside, the price would have been approximately $1500.

New Inco mine open

On June 28 the International Nickel Company of Canada, operator of the Copper Cliff refining complex near Sudbury, began mining and milling at new facilities at Shebandowan, designed for minimum impact on the environment.

The Shebandowan plant, 60 miles west of Thunder Bay was officially opened by the Honorable Leo Bernier, Minister of Natural Resources. Mr. Bernier pressed a button which set into motion a 3,000 foot long conveyer belt that transports crushed ore from the 400 foot level of the mine to the surface. This unique function eliminates the excessive noise of surface crushing of ore.

Shebandowan proudly claims a pollution-free operation with many environmental safeguards unique to the industry. Mine water used in milling is recycled and purified from the 300 acre tailings or settling area at a rate of two million gallons a day. The only water drawn from the lower Shebandowan lake is for drinking or washing.

Shebandowan headframe on Southwest Bay

The key phrase is 'minimize the impact', and with this in mind, the complex was designed to incorporate efficiency in a natural setting.

Shebandowan is capable of sending 3000 tons of semi-refined iron ore a week to Copper Cliff, but from Lake Shebandowan the only visible sign of industry is a 175 foot minehead that houses the miners elevators.

Less than half an acre has been cleared and sodded around the mine's offices. To reinforce the natural vegetation of the area, INCO has proposed to plant 1200 trees including 300 five-year-old poplar and spruce saplings, known for their fast growth.

When the facilities at the Shebandowan complex are completed, the total cost is expected to reach the $50 million mark.

Briefly: Toilet tanks to coal heaps

SAVE A BOTTLE

With the average toilet tank using five to seven gallons a flush, it's not unusual for a cost-conscious homeowner to put a couple of bricks or a weighted bottle in his tank to reduce its capacity and cut down on this use of water. But Fred E. Schmuck, chairman of the board of the Association of Industry Manufacturers, the maker of some of the equipment used inside these tanks, has a more direct method. He recommends lowering the water level by bending the float ball downwards about two inches. The saving, he adds, will equal the water wasted by a leaky tap.

POLLUTION FROM BLACK GOLD

Prairies oil production is not an unmixed blessing, Alberta's environment department reports. Department staff has found through monitoring over a 12-month study period that almost 20 percent of Edmonton's air pollution stems from petroleum evaporation from storage depots and refineries. The department also claims the petroleum industry was responsible for more than 90 per cent of the city's industrial pollution during the study year.

B.C. TIGHTENING CONTROL

British Columbia legislators are running up against the limitations of the province's present pollution control legislation. While they say the province is not in a polluted condition, they are looking towards more comprehensive legislation, possibly with an effluent fee system to require polluters to pay for their abuse of the environment. B. C. Resources minister Bob Williams said recently that the environment's assimilative capacity is an asset that belongs to all the people of the province.

COAL HEAPS TO BLOOM

The province of Alberta is carrying out grass seeding experiments on coal slack piles near the town of Blairmore. By stabilizing these piles, the grass will alleviate a serious coal dust problem and at the same time beautify the area.

However, there are some unique problems that will have to be solved before the experiment is a success. Eleven species of grass will be planted on the heaps to see what grass would be most suitable for the job.

Coal, as opposed to desert soil, has virtually no nutrients to help plant growth along, so various kinds of fertilizers including sewage sludge will be tried in conjunction with the planting program. A means will also have to be found that will keep the strong local winds from blowing the seeds away before they germinate.

STOL AIRCRAFT GOOD FOR ENVIRONMENT

Canada has a considerable lead over other nations in the development of short take-off and landing aircraft (STOL). Starting this fall, the federal government will inaugurate a special STOL service between Ottawa and Montreal, and if successful, the experiment should lead to a burst of activity in this country's aerospace industry.

The new planes have received strong praise from environmentalists because they can operate from very small landing strips, thus saving valuable rural land from airport expansion. The STOL port in Ottawa is located quite close to a residential area, and the Montreal end is a large parking lot left over from Expo '67.

Nanticoke study completed

The Nanticoke Environmental Committee has published a report on the water quality in the area of the eastern basin of Lake Erie at Long Point Bay.

The committee, composed of representatives from the Ministries of the Environment and Natural Resources, Ontario Hydro, The Steel Company of Canada Ltd., and Texaco Canada, Ltd. reports on conditions in the lake from 1967 to 1971, and it covers such fields as water chemistry, water movements, temperature changes and fish migrations; all of which are considered necessary to assess the effects of increased industrialization.

The committee was formed in 1968, a year after Ontario Hydro announced plans to construct a fossil fuel fired generating station on Lake Erie at Nanticoke, a region which supports active sport and commercial fisheries. At the time of its formation, the committee consisted of representatives from the Ministry of the Environment, the Ministry of Natural Resources and Ontario Hydro.

Later in 1968, Stelco joined the committee when it announced plans for a development on the shoreline adjacent to the Ontario Hydro site. In early 1970, Texaco became a member as a result of its planned development in the area.

The committee's report shows to date no significant change in the water quality, plant life or fish in the area of study; but if adequate funding can be arranged the group hopes to keep monitoring the Nanticoke study region for at least four more years.

When completed in 1977, the Nanticoke Generating Station will have a net output of 4,000 megawatts at full capacity, making it the largest generating station of its kind in Canada. Stelco is now actively considering the location of a steel-making plant on its Nanticoke site and Texaco recently announced firm plans for building a refinery with a capacity of 95,000 barrels per day.

Thompson Lake, near King, Ontario is showing signs of healthy recovery.

A way back for lakes

By using one of the most plentiful commodities available to man, members of the laboratory and water quality branches of the Ministry of the Environment, and staff from the Ministry of Natural Resources, have found a way to help oxygen-starved lakes back to a productive life.

That commodity? Fresh air.

The method being used is known as artificially-induced destratification. A typical installation consists of an air compressor, several hundred feet of polyethylene hose and a diffuser pipe in which several small holes have been drilled. The diffuser is placed in an affected lake, and the rising air bubbles "mix" the lake, drawing oxygen-rich water from the surface into the depths.

Over the last two years, three lakes have received this treatment and this year, two more will be the subject of destratification experiments.

BUCHANAN LAKE

The story started at Buchanan Lake, near the southern boundary of Algonquin Park in 1971. The lake had supported a flourishing trout fishery in the 1930's and 1940's, but lately the fish population had shown signs of falling off. A cottager asked the former Ontario Water Resources Commission to investigate the problem and recommend corrective measures. Tests showed that the lake was losing oxygen, but the loss was due to natural causes, not pollution.

Destratification equipment was installed at the lake in June of 1971 and the lake was mixed for a period of several weeks.

At the end of that time, there was a noticeable improvement in the water quality. The increased oxygen and food supplies established a healthy habitat for cold water fish species and a test netting that fall showed that the trout were thriving. In 1972 the lake was stocked with young brook trout and at last report, the fishing was excellent. The Ministry of Natural Resources assisted in the project, and kept up a detailed study on the trout population's growth and survival. By all accounts, Buchanan Lake is well on the way back.

Thompson Lake, near King, was suffering from excessive algae growth caused by agricultural runoff. In November 1972, destratification gear was set up and the mixing process has been almost continuous since that date. According to latest reports based on the operation of the diffuser from March through May, the lake's oxygen balance, temperature and most other chemical constituents have assumed a uniform profile. Transfer of oxygen to the lake bottom has eliminated hydrogen sulphide output (that rotten-egg smelling gas) and total and soluble phosphates in the water have been reduced. Iron concentration in the lake has been lowered, and carbon dioxide production has dropped, indicating the possibility that most of the organic material on the bottom has been oxidized. All current signs point to the establishment of a successful trout fishery.

VALEN'S LAKE

Valen's Lake, 48 miles southeast of Thompson Lake, was suffering excessive weed and algae growth, which, if left unchecked, could eventually cause the lake to be closed to fishing and swimming. The Hamilton Region Conservation Authority contacted the Ministry for advice, and destratification was recommended. A small compressor was installed near the lake and a Y-shaped diffuser located in the downstream part of the lake. This was operated through the summer season of 1972. Dissolved oxygen was maintained at the saturation level throughout the summer, and the hydrogen sulphide odors so prevalent in previous seasons were eradicated. Oxygen tests and flow measurements indicated the system was successful in keeping the water well mixed during the critical summer months.

There are two remaining problems at Valen's Lake. Eye irritation suffered by some swimmers is caused by the high pH factor in the water. This is caused by excessive weed growth, and it has been recommended that a concentrated weed control program be undertaken. Swimmers Itch caused by a small parasite, has also been reported at this location. The Ministry has suggested some form of separation of the swimming area from the main body of the lake as the most effective measure in solving this problem.

SCOTCH BLOCK NEXT

The Scotch Block Reservoir near Acton has caused a water quality problem downstream, again due to anoxic conditions. This will be attended to this summer with the instalation of a destratification system.

Based on past experience, the same results are expected at Scotch Block as were obtained at Buchanan, Thompson and Valen's Lakes.

Destratification is a fairly new art in environmental technology, and the Ministry has a good two-year start with chemical and biological experimentation.

It's a process that shows great promise for future water management.

Briefs submitted to task force

More than 65 industrial associations, labor unions, citizens' groups and concerned individuals have submitted briefs to the beverage container working group of Environment Ontario's solid waste task force.

In a two-day hearing, conducted in the Macdonald Block at Queen's Park, 24 of these gave public presentations of their submissions to the working group. The group is studying ways of reducing the amount of discarded beverage containers that wind up as solid waste. It reports to the task force which will make recommendations on the problem to Environment Minister James Auld.

REPERCUSSIONS

Ontario's soft drink bottlers claimed during the hearings that when they raised deposits from two and five cents on small and large bottles to five and 10 cents, more consumers began to switch to throwaway containers.

Metal container manufacturers argued against restrictions on the use of cans, claiming that this would result in loss of jobs. They were supported by some union representatives and delegates from the vending machine industry, which has invested in equipment designed to dispense canned beverages.

The Hamilton chapter of the Consumer's Association of Canada, the Group against Garbage, Pollution Probe, the Conservation Council of Ontario and the Burlington Citizens' Committee for Pollution Control all endorsed some application of an outright ban on non-reusable containers. The Ontario Federation of Agriculture called from some form of restriction on throwaway containers. The federation was particularly concerned with litter problems.

WASTE CONFERENCE Continued from page 1

threats of war are essential.

A series of papers dealing with technical problems and solutions were well received and enthusiastically discussed through the conference.

ALTERNATIVES

John Hearman, executive officer of Environment Ontario's solid waste task force, in discussing the contemporary waste scene, suggested that he free municipal garbage collection system is not necessarily an ideal permanent institution.

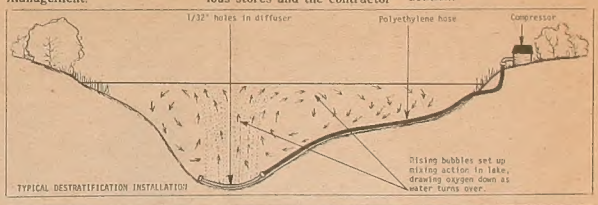
"Can we contemplate municipal collection and disposal on a basis of user charge?" he asked. "It seems to me that our present method of supplying unlimited service paid for from general revenue encourages the throwaway spirit. . . .

There was a private contractor to the citizens of York County who made his charges through the sale of specially marked plastic bags. These were available to the public through various stores and the contractor collected as many as were put out."

He reminded the delegates that many amenities and services we once enjoyed—home delivery of groceries, bread and milk—are disappearing. "Possibly we shall see area garbage depositories where we shall make our daily drop offs. After all, we carry the stuff home in the first place."

Mr. Hearman's speculations of the future of garbage disposal capped a resume of waste management progress to date and a discussion of some of the problems the task force and the ministry is dealing with now.

T. B. Reynolds, plant development engineer with Ontario Hydro, discussed environmental assessments—where and how they should be applied. Public participation is becoming a way of life in Ontario, he said. And it is an important development that offers significant opportunities in public education.



Interest high in recycling plant

More than 50 consulting engineers have shown interest in designing Ontario's proposed pilot waste reclamation plant.

The plant, announced recently by Environment Minister James Auld, is to be a working unit capable of recovering substantial quantities of reusable material from incoming waste. But its basic feature is flexibility.

"It must be flexible enough to accommodate all the different experiments that the Ministry's waste management branch plans to conduct," Mr. Auld said.

In asking consultants to submit qualifications, the Ministry specified that the reclamation plant's objectives include the investigation of options in procedures, processes and equipment for separation and reclamation. It must also provide for the study of additional processing required for marketing of reclaimed material, assessing methods of reducing transportation costs and reliable estimation of operating costs for various reclamation systems.

The goal is to develop reclamation systems that can be effectively applied to municipal waste treatment.

In Hamilton, the municipal SWARU installation is designed to separate metal for reclamation and to reclaim the balance of the waste load in terms of energy—steam for in-plant use and for sale to other users.

A number of experiments are under way in the U.S., primarily dependent on federal subsidization.

Ontario's goal is to develop workable and economical systems for practical application.

The submissions from the interested consulting engineers are being reviewed by the Ministry and one of the applicants will be chosen over the next few months.

Ross Kennedy (left) and Robert Graham (right) pile waste paper into collection truck. Local industry pays Ministry $7 per ton.

Brampton recycling study

"Throw out everything but my lunch and jeans", yelled John Borys, 22, as he and his three team-mates emptied their van of Brampton's newspapers.

The students, from universities and community colleges, are part of a Ministry of the Environment study, involving the Town of Brampton, which evaluates the various types of separation and recycling.

Each day the group travels the same area of town as Munisan, a private garbage collection agency on contract with the Town of Brampton. They pick up all the household newspapers which have been bundled separately from the garbage. The home-owners have been asked to separate the two through the news media and flyers.

Doug Foster, 23, supervisor of the group, feels "the response isn't that good. We spent the first week doing surveys; we knocked on probably a couple of thousand doors. But less than half of the people who said they would put out their papers are still continuing to do so."

The four field technicians—"we are not garbage collectors", John said firmly—meet each morning, Monday through Friday, at the Brampton Fairgrounds at 7 a.m. "My family gets up early anyway," said Diane Rigo, 21, "and it's better to collect most of the papers early in the morning when it's not too hot." They take a half hour for lunch and usually finish up between three-thirty and four.

TAKING TURNS

The students take turns on the various aspects of the job —handing the papers into the truck, weighing them, recording the weights and driving.

Eventually the amount of paper collected from each house will be compared to the questionnaire filled out by the home-owner. In this way the waste management branch of the Ministry can obtain a general consensus on how often people want to put their paper out and how much to expect.

After a ton of paper is collected, the van heads for IKO, a roofing supply company on Orenda Road. The paper is used in the company's shingle making process. Before and after dumping, the van is weighed on the company scales. IKO pays the Ministry $7 for each ton of paper.

On Wednesdays, the area which must be covered is so big that another team of students from the Ministry helps out. The garbage men appreciate having the students working. "On Wednesdays, with both groups working, we pick up about eight tons of paper so it makes a big difference to the garbage men," said Doug.

The job "can get mentally tiring because of the routine," said Liz Houghton, 20, the fourth member of the group.

"But you can get a nice tan," Diane interjects.

OLD BOOKS

Liz is also happy about the "really old magazines—1940's and 50's"—that they have found. The field technicians haven't decided what to do with them yet.

They have had a few complaints about missing some paper. In many of these cases the people put their paper out after the street has been done. Other people put it in hard-to-see places.

"Who wants to take my turn and get that paper," said John as he spies some newspapers on a veranda guarded by a growling dog.

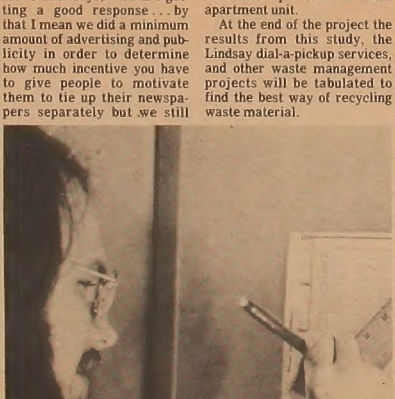
Once a day Doug calls Adam Ciulini, special projects engineer, planning section, waste management branch, in Toronto. Adam is responsible for the project as well as for working with the other 75 students hired by the branch this summer on similar schemes.

RESPONSE GOOD

"As far as I am concerned, Mr. Ciulini says, "We are getting a good response . . . by that I mean we did a minimum amount of advertising and publicity in order to determine how much incentive you have to give people to motivate them to tie up their newspapers separately but we still collect about 15 tons a week." However, in the last eight weeks of the project the Ministry may step up its advertising campaign.

According to Mr. Ciulini, there is no pick-up from the apartment buildings in the area because "they present a problem. The idea of the study is to find out on a household basis what the home-owner is willing to do." It would be difficult to keep records for each apartment unit.

At the end of the project the results from this study, the Lindsay dial-a-pickup services, and other waste management projects will be tabulated to find the best way of recycling waste material.



Accurate records of the collection program are required-Allan Lamb keeps daily tally.

Straight Goods

Straight Goods III, the third annual youth conference, will bring together 300 students from across Ontario, and over 50 resource people representing government, industry, education, and private groups.

This year's session, August 26-29, is being hosted by the University of Western Ontario, and is sponsored jointly by the university and the Ministry of the Environment.

John Robarts, former Premier of Ontario, will welcome delegates to his home town of London and officially open the conference.

Tony O'Donohue, who as a Toronto alderman was the first chairman of the city's environmental committee, will be the chairman of Straight Goods III. An engineer who is deeply involved in environmental issues, Mr. O'Donohue is now heading Environment Ontario's "Watts from Waste" study team.

The opening day's topic of discussion is "Urban Development and the Environment." The sessions will be factual and will touch on the main environmental concerns of air, waste, noise, energy, population, and diminishing resources. Speakers include Colin MacFarlane, director, air management branch, Ontario Ministry of the Environment; Professor Norman Pearson, University of Western Ontario; Professor Robert Dorney, University of Waterloo, and Mr. D. Bartlett, the Canadian Council for UNESCO.

The afternoon session will give the organizations an opportunity to react to the social issues and the Honorable James Auld will make a presentation at this time on the role of the Ministry. Gar Mahood, executive director of the Canadian Environmental Law Association, and Peter Middleton, Pollution Probe at the University of Toronto, will speak next.

The major environmental concerns facing Ontario will be under discussion, and this year Energy is the focus of attention. Tuesday is "Energy Day", and representative for the energy producer's sector, along with major energy consumers will debate the question Energy Crisis and the Environment. Among the panel members will be E. Siddall, Atomic Energy of Canada Ltd., Ray Shaver, president of The Petroleum Association for Conservation of the Canadian Environment, Don Gillies of Ontario Hydro, J. E. Morris, Canada Department of Energy, Mines and Resources, and E. Werner, General Motors of Canada Ltd.

The afternoon session on Tuesday, entitled Ontario and the Energy Crisis, will be keynoted with a presentation by the Honorable W. D. McKeough, newly appointed Energy Minister.

The Wednesday morning session is devoted to a look into the future, with Limits to Growth the topic for discussion.

The conference will conclude with a plenary session, giving student delegates the opportunity to put forward proposals and recommendations resulting from the three-day conference. Straight Goods III —encouraging student involvement in today's environmental issues.

Pierre Philippe of Oldcastle shows off a healthy stand of vegetables grown with his product.

Sludge recycled to fertilizer

Pierre Philippe of Oldcastle, a small village six miles from Windsor, Ontario, operates a unique commercial recycling project.

He processes sludge from the nearby Little River sewage plant and turns it into a commercial fertilizer that has found wide acceptance in the Windsor/Detroit area. The process has been under development for over seven years, and Mr. Philippe now feels that he can consider branching out and locating operations in London and Metro Toronto, where there are impressive amounts of sludge generated at local sewage plants.

The story started in his native island of Jersey when Mr. Philippe was a youngster. He collected seaweed from the island's beaches and used it to make compost for his father's truck garden. He emigrated to Canada in 1947 and went into the landscaping business shortly after.

He currently has an agreement with the City of Windsor to take up to 100 tons of sludge per day from the Little River plant. He could eventually handle the total 900 ton per day output of all the city's treatment plants.

SECRET PROCESS

Mr. Philippe hauls sawdust from a nearby pallet plant and piles the material in 20-foot heaps. The sawdust is then "innoculated" with a special bacterial catalyst, known only to Mr. Philippe. The catalyst then starts a process of fermentation in the piles. The moisture content is watched very carefully in order to assure bacterial action. Some water is added, but often the piles are turned over on a rainy day.

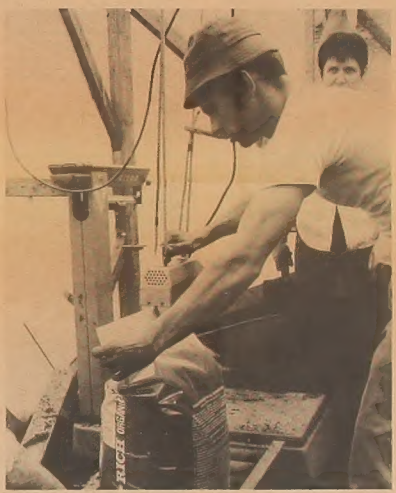
The sewage sludge is trucked to the Philippe farm, and covered with the activated sawdust, usually after the sawdust has been working for about three months. The bacteria (about four billion per gram) immediately attack the sludge and as a result kill any odor that might develop Mr. Philippe stresses the fact that his operation has no fly, odor or other nuisance problem. "The board of health has looked us over and given us a clean bill", he said.

TEMPERATURE CONTROL

Within 24 hours the temperature in the heaps rises from about 60 degrees to over 100 degrees, and reaches a peak of between 145 and 155 degrees. When this stabilizes and starts to drop, indicating the bacteria are getting lazy, the heaps are turned and aerated, which starts the bacterial action going again. An important part of the process is the use of the sawdust. This permits steady aeration of the heaps, feeding the bacteria oxygen and keeping up the reactions deep down in the piles.

The piles are turned in sequence and the temperatures are carefully watched. After turning the piles one to three times, dependant on the temperature readings, the material is shredded usually twice, at the rate of 100 cubic yards per hour, then carefully shaped into neat, conical piles. The shape, according to Mr. Philippe, is very important in order to achieve good, even fermentation in the piles. The material is again put through the shredder and then screened for wood chips, which are returned to the piles to add bacterial action to the fresh compost. Once this is done, the material is put into 25 and 50 pound sacks or sold in bulk, usually to specialized cash crop farmers.

When he started the business, Mr. Philippe had to do all the heavy work by hand, often loading ten tons of the material before breakfast. A few years later, he acquired suitable powered shredding machinery, and kept on expanding, going to a larger shredder and on to the current 100 cubic yard per hour model, which he says will soon have to be replaced with an even larger shredder. He said his present property is not large enough to provide the room necessary for the business, and a 15-acre site nearby would soon be purchased.



Workers bag freshly made conditioner for market

Pierre Philippe is quite unique. He is highly conscious of the need for recycling materials such as sewage sludge and returning them to the land where they can do the most good. He feels that modern farmers are not making use of the plentiful and natural fertilizers produced by their livestock.

RECYCLING

"Years ago," he said, "they used to nurse their manure piles. Now they have it taken away or just dump it someplace, and use chemical fertilizers. We have to recycle in order to survive".

He cited a good case in point from Europe, specifically, Alsace/Lorraine. In this part of France the farmers live in small villages and go out to their fields each morning. The measure of wealth here is not necessarily in money; it's measured by the size of the manure heap in front of each house. The larger the pile, the better crops the farmer will reap. "You don't have to call any credit bureau to see how well off a man is there . . . you just go around and have a look at his manure pile", Philippe said.

Earlier this year, James Auld, the Minister of the Environment, visited Mr. Philippe's operation and came away highly impressed. John Heaman, executive director of the Solid Waste Task Force said, "Mr. Philippe has proved beyond any argument that he can do the job and can turn out a product that can be usefully put back on the land.

All we have to do now is prove that it is economically acceptable and that it can be done on a very large scale. I don't see why it can't."

Pierre Philippe has a standard reply when asked what he does for a living.

"Every time you use your toilet, it puts a nickel in my pocket".

Make your own compost heap

A compost pile is a first-rate soil conditioner and an excellent way of disposing of lawn clippings, dead leaves and plant tops.

If you live on a good-sized plot of land, the ingredients are easily available to provide a large amount of healthy soil conditioner, and the job is quite simple.

Between two boards about four feet apart and four or five feet high, place an eight inch layer of plant material and add roughly three inches of garden soil to separate the layers of plant refuse. When the alternate layers of soil and plant material reach a height of about four feet, the pile should be left undisturbed for from six to eight weeks.

During this time and while the pile is being constructed, water should be added to keep the materials moist, encouraging chemical breakdown.

After several weeks, the pile should be turned with a spade to permit aeration and added chemical activity. The pile should be worked thoroughly at this stage to ensure that all the material receives the same exposure to the air.

Within a week or two after turning, the compost can be worked into your garden soil.

Composting is a most logical way of recycling organic material to the soil.

$7.2M Thorold recovery plant

A new $7.2 million chemical recovery plant for water pollution abatement was officially opened July 31, at The Ontario Paper Company Ltd. plant in Thorold.

Company officials announced that the plant completes a $9.2 million abatement program which began in 1969 to reduce suspended and dissolved wastes in the company's effluent to the old Welland Canal. The first installation under the control program was a clarifier, installed in 1969 and a chemical recycling system was completed in 1961.

Ontario Paper is optimistic that the treatment of liquid wastes from pulping and by-product operations will substantially reduce the company's contribution to color and foam in the old Welland Canal.

Premier William Davis was one of the 200 guests invited to the official opening. Also invited were federal, provincial and municipal government representatives and suppliers and business associates.

Adding zest to the occasion, this year the company is celebrating its 60th anniversary in paper production in Thorold. The newsprint mill site was chosen for two main reasons—the accessibility of water, for plant operation and for transportation of raw materials and finished product, and the availability of electrical power from Niagara Falls.

"I can't think of a nicer birthday gift we would like to give to the community than a better look to the old canal," said Ontario Paper's president Robert M. Schmon.

Special steel and fiberglass containers make up Ontario Place's unique "garbage train", which collects units from concessions.

Ontario Place keeps it clean

Keeping Ontario Place beautiful is a never-ending job, according to maintenance supervisor N. McKeown.

On an average day, a ton or more of garbage is collected on the islands—on peak days, during a long weekend, the load can go to two or two and a half tons. By weight, half the load is paper, with the other half mostly food wastes.

There are about 28 bulk containers scattered across the site to handle the waste from the restaurants and food and drink stands. Concessionaires put their waste in these containers in plastic bags.

In addition, some 85 litter containers are located around the islands to make it as easy as possible for visitors to use them.

Of course, there are always people who don't use the litter containers—enough of them to make it necessary for a student on each island to work continuously picking up litter.

Most of it is paper, but there are some specific localized housekeeping problems. The lineup for Cinesphere, for example produces a steady load of cigarette butts crushed on the carpet. Ontario Place staff are still working on providing and maintaining an adequate supply of ashtrays along the lineup. One problem here is the need for a vandalism-proof ashtray.

GARBAGE TRAIN

A new collection system has just got under way at Ontario Place—a garbage train. Maintenance staff and the Oakville firm of Aero Marine Industries Ltd. worked out specially designed steel and fiberglass containers. These containers on wheels each hold a yard and a half of garbage, and all have covers to keep loose waste from blowing away. They can be connected in a long train, and towed around the grounds. Outside the concessions, full containers are linked to the trains—they are light enough for one driver to handle—and empty ones are left in their place. The wheels on these containers are locked to keep them in place for pickup.

The train operator, in addition to changing the containers at concessions, tows empty cars and empties the litter containers into them as he travels the site.

A new garbage packer in the maintenance area at the east end of Ontario Place picks up each of the train's garbage cars and dumps and packs its contents into a covered 35-yard container. This is exchanged for an empty container and trucked away to a disposal site daily.

The whole system is designed to keep garbage under cover, where it can't be blown around or cause odor problems.

Until the train went into operation, bagged garbage from the trash receptacles around the island was loaded onto an open barge and carried to the maintenance area by water.

Now the barge is free for use in cleaning up floating litter. A scoop on the front of the barge collects floating debris so the operator can rake it aboard.

DAILY CARE

Mr. McKeown said his entire staff is concerned about keeping the islands clean and attractive. The parking lots and roads are washed daily and special attention is given to cleaning up the Island entrances every morning before Ontario Place opens.

"All our maintenance staff are expected to pick up any trash they see," he said. "I do it myself as I walk around the site."

Thames Basin study

The 120-mile Thames River basin is one of the most productive agricultural areas in Ontario. The watershed covers 2,200 square miles and contains forty-one townships, seven villages, seven towns, and four cities. The water resources of the basin are essential for agricultural uses, industrial and municipal water supply, waste disposal, and for water-based recreational purposes.

Since the 1950's, the Upper and Lower Thames River Conservation Authorities, together with the Ministry of the Environment have been the main agencies responsible for the management of the basin's water resources. The former has been involved in the recreation and conservation activities, while the latter has dealt with water supply and pollution problems. Many of the agencies' objectives have been met.

However, recurrent flooding and erosion and problems with pollution and water shortages combined with increasing pressures of population growth and economic development suggest the need for an updating and expansion of water management objectives for the entire basin.

The Ministry of the Environment, working closely with the Ministry of Natural Resources, recently started an intensive study of the Thames River Basin in Southwestern Ontario. The purpose of the study is to develop comprehensive guidelines for the management of the basin's water resources with a view to providing sufficient water of high quality for recognized water uses and protection against flooding and erosion. At this point, most of the study effort has been directed at the collection of data concerning water quality, availability and uses.

PROGRAM

As a part of the study, a Public Consultation Program—"PCP"—will be conducted in the watershed to obtain first hand information on the choices and views of the people living in the area who are concerned with the management of the basin's water resources.

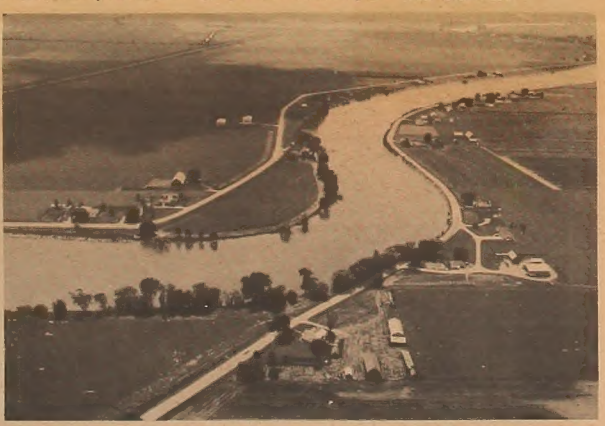
The first phase of the PCP will include interviews and meetings with municipal officilas, interest groups and interested citizens. The study team will have an opportunity to discuss in detail the scope and progress of the study and exchange views of the objectives. Similarly, these groups will be able to comment on the study and suggest investigation of problems that might have been left out of the original study design. Information obtained from these discussions will assist the study group in the selection of possible alternatives during the preliminary assessment of findings.

PHASE TWO

The second phase of PCP will be regional meetings which will be held when the preliminary assessment of findings has been completed. At these meetings a summary of the information obtained from the first PCP will be presented, as well as a list of alternatives. The feedback obtained from these meetings will help the study group prepare a final report.

The findings of the physical studies, together with the information obtained from the public consultation program will be used in the formulation of recommendations for water resource management guidelines for the basin.

A Thames River Study Information Bulletin outlining the study and providing details on how the public can become involved is available at the London Regional Office of the Ministry of the Environment, local offices of the Ministry of Natural Resources, Conservation Authority offices, local libraries and other community gathering places. Copies of the brochure can also be obtained by writing directly to: Thames River Basin Study, Ministry of the Environment, Suite 400, 135 St. Clair Ave. W., Toronto, Ontario, M4V 1P5.



Aerial view taken near Lake St. Clair end of river shows slow meandering of watercourse.

East York paper program

Independent recycling projects are going ahead with some claims of success in some Ontario communities.

East York, Metropolitan Toronto's smallest borough, has installed separate paper racks on its regular garbage trucks and is encouraging borough residents to separate and put out bundled paper.

"It's really efficient and I think we've got a bit of a profit," said deputy works commissioner L. W. Oram. But more could be dangerous. At the moment, he said, only 10 percent of the community is separating its waste. If more people put out bundles of paper, the racks would be too small to take the load.

Mr. Oram feels that if this happened, the separate collection needed to deal with a heavy paper load would be too costly.

Toronto and Etobicoke have separate collection programs and while neither municipality has firm cost figures both say they are losing money. Works officials in the two communities feel that a higher volume of paper would improve the cost picture.

Burlington's Citizens Committee for Pollution Control, one of Ontario's best established volunteer recycling operations, reported recently that its volume of waste reclaimed has more than doubled over the past year.

The committee, with its main depot in a town works department building, handled 120 tons of glass, 40 tons of metal and 200 tons of paper during 1972. Members say they have recently switched to a containerization system that will permit them to handle any future increase in volume at the centre.

Earthwatch

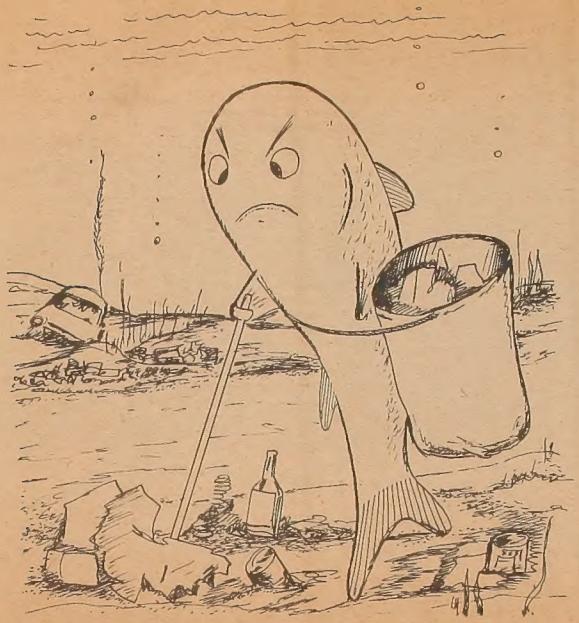
OIL SANDS GROUP TO STUDY ECOLOGY

A group of 16 firms has formed an oil sands environmental study group, which has the full support of Alberta's environment minister John Yurko. Composed of representatives from 16 oil firms, the group will develop the know-how to minimize ecological problems that could occur as the result of the operation of extraction plants in the Athabasca area. The group will work closely with the research secretariat of the province's environment department and will use local residents and Alberta-based consultants where possible.

As a result of this action, the energy resources conservation board has revised the air pollution regulations it had previously established for the proposed Syncrude plant at Mildred Lake.

PERMAFROST COURSE

A course in recent developments in Permafrost engineering will be held during the last week of August at the University of Alberta. The program will feature lectures and workshops on the distribution and recognition of ground ice, site investigation practice, flow of heat in ground, thermal properties of soils, properties of frozen ground, thaw consolidation of soil, foundation design and slope stability. Tuition fee for the course is $250.00



Good boating habits urged

Keep Summer beautiful

Each summer, Ontario's lakes and rivers become a source of fun for thousands of boaters.

Canoes, rowboats, and even houseboats take advantage of this province's waterways, but too often, some land based pollution problems are transported onto the water.

In Alberta, officials are worried about pollution, noise and erosion caused by engine powered craft, and also about the safety of swimmers and boaters with the increased number of craft whizzing around.

This concern has prompted Alberta's government to set speed limits of 8 mph on some lakes, restrict boating to non-motor-driven craft on 93 waterways, and on seven water bodies in the Red Deer region, prohibit boating entirely.

Noise, shore erosion, littering and other types of pollution are things that can be tackled on a personal level. These suggestions will help to maintain the quality of your favourite area.

LITTER

Don't litter. Any cans, bottles or wrappers that go out in your boat should be taken back to shore for proper disposal. Debris thrown overboard is more than just an eyesore. It can be a hazard to swimmers, water skiers and other boaters.

Handle fuel and oil carefully. Fuel slops and spills should be avoided for your own safety as well as for the protection of water quality. A little bit of spilled fuel goes a long way. It makes a big ugly slick on the water.

Take it easy. Running your power boat flat out continually makes a racket that others on the lake don't appreciate. It also burns up fuel and engines fast, and in some areas the wake from fast boats cause erosion problems. Slow down and make a few friends along the way.

WATER CARE

Protect your water supply. If you have a fresh water tank aboard, fill it only from an assured safe supply, such as a municipal water system. If you have any doubts about your tank, sterilize it with one ounce of household bleach for every three gallons of water for at least 12 hours. Then flush it well with clean water. Remember. It's better to be safe than be sorry.

Clear your channel. Underwater debris and weeds off your dock can lead to trouble. There are aquatic weed killers on the market, but the best bet for the small boat owner is still to get out in the water with a rake to clear the area.

As a reminder, Environment Ontario is distributing Pollution Fighter decals and windshield stickers. For yours, and for more information on good boating, write: Information Services Branch, Ministry of the Environment, 135 St. Clair Avenue West, Toronto, Ontario, M4V 1P5.

Ministry seminar outlines programs

On June 14th, the Ministry's air management branch hosted a one-day seminar for city engineers and planners from all across Ontario to explain the Ministry's air and noise pollution control programs.

Many pollution problems are the result of conflicting land use and the purpose of this seminar was to point out how these problems could be avoided before they happen by considering them when planning municipal layout and expansion.

After a general introduction by C. J. Macfarlane, director of the air management branch, C. E. Duncan of the branch's abatement section, outlined the Ministry's activities in the abatement of air pollution with special reference to incinerators and other municipally-run sources.

Noise problems and Ontario's program for their control were discussed by K. E. Temmelpeyer of the branch's special studies section. Of particular interest to this audience was the definition of the roles of the province and the municipalities in noise control.

L. Shenfeld of the air quality and meteorolgy section talked about air quality in Ontario cities and how the weather can affect this. He also discussed the dispersion of air contaminants and the differences between this dispersion from ground-level sources and from 'high' stacks.

A. E. Boyer of this same section explained the use of computers to develop air pollution 'models' of cities and thereby help planners see and avoid potential pollution problems.

The day's session was rounded out by a discussion of land use policy and environmental management by V. W. Rudik, of the Ministry's strategic planning branch.

Sudbury plant opens

From left to right, D. Collins, Chairman, Regional Municipality of Sudbury, MPP John Rhodes, and Councillor Roy, Sudbury.

For Donald Collins, former chairman of the Ontario Water Resources Commission and now chairman of the Regional Municipality of Sudbury, the official opening of the Sudbury water pollution control plant was a milestone.

As soon as the plant went into operation last December, he told guests at the June 7 opening, Ontario could claim sewage treatment in every city in the province. The challenge now lies in getting U.S. states to match Ontario's achievements and purify the discharges from their communities for the sake of Great Lakes water quality.

There was a certain amount of personal satisfaction for Mr. Collins. He was chairman of the OWRC at the time the City of Sudbury was committed to building the plant and at the opening, as chairman of the regional municipality, he joined Andy Roy, representing the City of Sudbury and MPP John Rhodes, representing Environment Ontario, in turning the plant on efficiently.

Mr. Rhodes, parliamentary assistant to Minister of Natural Resources Leo Bernier, also joined Mr. Collins and D. S. Caverly, assistant deputy minister in charge of water management for Environment Ontario, in cutting the ribbon to allow guests into the building.

He complimented Sudbury for undertaking the $6.5 million plant with no financial aid from the province.

The plant, a high-activated sludge facility, has a capacity of 15 million gallons per day, and a potential to serve 150,000 people. At its present loading, it is serving 90,000 people, leaving capacity for future growth in the region.

The plant is also providing material assistance to environmental reclamation in the Sudbury area. Sludge disposal, often a problem in a community treatment plant, is an asset in Sudbury. Sludge from the treatment plant is being used by the International Nickel Company of Canada Ltd. in a program of fertilizing and seeding the extensive areas of ground covered by sterile mine tailings.

So in addition to providing cleaner water, the treatment plant, which is operated by Environment Ontario staff, in contributing to a cleaner, greener landscape.

EcoLogic

Concerned Press

A Hamilton Spectator reporter concerned about environmental issues wrote:

"What will it be like in a few years from now if the present insane idea of emptying the sewage of our fast increasing city into the Bay is carried out?

"It will be a place where man cannot live on its shores not fish in its waters—a veritable hotbed of disease. Bathing, shooting, fishing will be a thing of the past and even rowing will not be a desirable pastime over a putrid, filthy mess such as it will become."

PROPHECY

The prophetic words were printed on November 23, 1887, and in spite of the warning, the people of Hamilton were content to see all sewage emptied directly into the Bay through an iron grate for more than half a century.

Of course, once sewage treatment was developed there, and effluent treatment programs were established in waterfront industries, the deplorable state the Spectator warned of began to improve.

The press in Ontario has quite frequently seen the writing on the wall long before most of us realize the wall is there. Ron Poulton, in his book, The Paper Tyrant, about John Ross Robertson, documents a Toronto Telegram expose of water mismanagement.

The newspaper discovered in 1875 that the Toronto Water Commission had authorized wooden watermains to be laid under Blockhouse Bay. The City Engineer confidently ordered the wooden pipes anchored under two feet of sand and turned on the pumps.

The pipes promptly bobbed to the surface of the bay. The engineer, still optimistic, claimed $3,000 would solve the problem. The lowest tender that came in on the replacement job was $17,000.

BETTER COAL

Mr. Robertson was a colorful figure in early Toronto and many of his personal attitudes were reflected in the operation and in the copy of his newspaper.

Although he had a distaste for extravagance, he always paid extra for anthracite to burn for power for his presses. He refused to have anything to do with soft coal, which was cheaper, because: "It fumes."

The press, and more recently their electronic news media associates, still show that personal concern for pollution and the results of that concern still appear in the news.

The gentlemen of the press . . . May they never change.

Guest Editorial

Legacy's guest editorial this issue is an independent and reasoned look at waste management and recycling, written by Catherine Haller, Editor of Scarborough Local News and published recently in that weekly newspaper.

The Metropolitan Toronto Works Committee met with James Auld, Minister of the Environment recently to discuss the problem of dealing with garbage.

Controller Ken Morrish, chairman of the committee, has previously stated he feels the problem is a province wide one. For each area to try and combat the problem individually is not as sensible as all working together to deal with it.

There has been a great deal of concern over the disposal of waste products. Re-cycling has so far, to a large degree, shown unprofitable. There are a few exceptions but on a large scale it is not working at the present time.

The main problem with re-cycling is to encourage people to separate their garbage before putting it out to be collected. This requires no more than time on the part of the public, but time is becoming more and more important.

If garbage re-cycling were to work people could benefit a great deal from it. First the pollution problem would be solved. Also if the municipalities, or provincial government, were to make money from re-cycling programs the cost of collecting the garbage could be paid from the profit. Rather than from taxes collected.

Should the revenue be high enough it could be used to pay for other government services presently supported through taxes.

If re-cycling is to work it must either be subsidized by the government, through taxes, or devised in such a way as to make a financial profit. The latter is definitely preferable.

This is presently what is being studied, but it is good to hear that it is being studied and not just ignored.

Published bi-monthly by the Ministry of the Environment, Information Services Branch, 135 St. Clair Avenue West, Toronto 195, Ontario for those interested in the many facets of environmental enhancement. Reproduction of articles authorized without further permission.

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Director of Information Services . . . . . **M. F. Cheetham**

ENVIRONMENTAL STUDIES

Students measure noise levels

Public school students get first hand experience with decibel meter.

By DAVID ALLEN
Educational Resources Coordinator

Students at Rousseau public school in Ancaster have been learning from first hand experience about noise pollution and its control in Ontario.

Together with their teacher, Dale McLellan, the students measured noise levels throughout their school. From the school interior they also moved to the parking lot where each teacher's car was tested.

Prior to the monitoring, classroom preparation centred around discussions of sound, noise and pollution. By viewing a slide-tape presentation prepared by the Ministry of the Environment, each student was made aware of this the fourth pollutant—noise.

For most of the students the term "decibel" was completely new. A decibel, they soon found out is a unit of sound pressure level. The starting point on the scale of noise levels is referred to as 0 decibels. This is about the level of the weakest sound that can be heard by a person with very good hearing in an extremely quiet location.

With an understanding of the dangers of noise pollution and armed with a knowledge of how to measure and record noise levels, the students each plotted noise source charts based on their school and the immediate surroundings. They were surprised to find such a variety of readings. In the school resource centre, the meter registered 30 dbA while in the office 55 dbA. The furnace room registered at 70. The highest reading occurred during the testing of the cars. Readings in the 80's were recorded by most students.

After monitoring, each student then had to recommend ways to reduce the excessive noise levels. Recommendations included a ban on gasoline lawn mowers, better car mufflers and quieter air conditioners. The recommendation which was unanimously agreed upon by the students called for the end of the school bell to start classes.

Teachers interested in setting up a unit of study on noise pollution and its control should contact the Information Services Branch at the Ministry of the Environment.

Nuclear power: pros and cons

Nuclear power is both good and bad news, delegates were told in a panel discussion during the Canadian Nuclear Association conference at the Royal York Hotel.

Dr. Philip Jones, chairman of the Institute of Environmental Sciences and Engineering at the University of Toronto, presented the dangers of the nuclear process. He said some lakes in the uranium mining area of Elliot Lake had concentrations of radium 226,220 times the background level because of dumping. He noted other problems, specifically nuclear plants releasing radioactive substances into the air, waste heat from plants causing temperature increase in local waterways and shoreline regions, and finally, the possibility of "nuclear hijacking—now within the grasp of any bright lunatic."

In an earlier session, George Gathercole, chairman of Ontario Hydro, described the successful 2,000 megawatt reactor in Pickering as the "flagship of the Canadian nuclear program."

H. A. Clarke, formerly of Ontario's Ministry of the Environment, said the effect of thermal pollution is similiar whether it comes from a nuclear plant or a conventional power station fuelled by coal, oil or natural gas. Waste heat from a growing number of power plants would have a relatively insignificant effect on the temperature of the Great Lakes system, but there could be considerable impact on a small section of shoreline, affecting food chains and possibly fish life itself.

Mr. Clarke stated these consequences must be considered in selecting power plant sites. He urged constant monitoring of sites to detect indications of ecological changes, and wondered whether water discharge lines from shore plants might in future be extened into deeper water away from shore.

W. M. Camp, of Atomic Energy of Canada Ltd., told how the Federal Atomic Energy Control Board licenses the disposal of all radioactive materials from the country's four nuclear power stations—the D nuclear power demonstrator on the Ottawa River and the plants at Douglas Point on Lake Huron, at Gentilly, Que., and at Pickering. As a result, only small amounts of radioactive gases and liquids are discharged into the air and water courses "In carefully monitored quantities that are well below the permissible limits."

If a site is found to be in an area of ravines or unique vegetation, there exists the possibility that it will be protected from intensive development and even restored (as was done at Sainte Marie at Midland), based on knowledge of Indian life in ancient times.

The assistance of local residents is being sought to catalogue artifacts and check known or possible sites.

Ancient Pickering sites surveyed

The future townsite of the North Pickering Community Development Area is undergoing a foot-by-foot investigation to find signs of early indian settlements. Several investigative digs have been done in the area, but there is still scanty knowledge of how many prehistoric sites are located in the area, their condition and how important these sites are to the interpretation of the prehistory of the district.

In 1972, the site was the subject of an intensive survey, and this year archaeologists will conduct on-the-ground surveys and test the located sites.